



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Notes on Rosaceae—V
POTENTILLA (*Continued*)*

PER AXEL RYDBERG

FRIGIDAE

In the North American Flora I recognized five species of this group. No essential change was made from my treatment of the group in my monograph, except that I united *Potentilla nana* Willd. with *P. emarginata* Pursh. My conception of *P. nana* had been that it was the same as *P. fragiformis parviflora* Traut., i. e., a depauperate *P. emarginata* with blunter leaves, bractlets, and sepals. Dr. Th. Wolf, who has seen the type of *P. nana*, claims that it is a depauperate *P. fragiformis* instead. The main distinction between *P. emarginata* and *P. fragiformis*, according to Dr. Wolf, is that in the former the styles are scarcely longer than the achenes, while in the latter they are fully twice as long. In *P. emarginata* the styles are short, it is true, but as far as *P. fragiformis* is concerned I have not been able to verify Dr. Wolf's statement. In all the specimens at my disposal the flowers are very young, and the achenes undeveloped, but the styles do not seem very long. Dr. Wolf may be correct, however. At all events *P. nana* should be reduced to a synonym.

Dr. Wolf has also criticised my plate of *P. fragiformis* in my monograph, and rightly so. In the specimen used for the illustration of the plant, the petals had fallen, and I instructed the artist to draw the flower from another specimen, which had better flowers but was otherwise scrappy. Apparently he did not follow my instruction, for the flower represents *P. emarginata* or *P. nivea*.

Dr. Wolf divides the species of this group between his RANUNCULOIDES and AUREAE, referring *P. flabelliformis* and *P. fragiformis* to the former and the rest to the latter group. See my remarks under the AUREAE † group concerning this treatment. *P. Friesiana* is regarded by Dr. Wolf as a ternate variety of the quinate *P. alpestris*, i. e., *P. maculata* as understood in America.

*See Bull. Torrey Club 37: 487-502. 28 O 1910.

† Bull. Torrey Club 37: 495. 28 O 1910.

BIFLORAE

This group consists of but one species. Dr. Wolf places the group in his section POTENTILLAE TRICHOCARPAE subsection NEMATOSTYLAE, i. e., in a section with hairy ovaries and the filiform style attached at or below the middle of the ovary. The only American species that should be counted to this section is *P. tridentata* or my genus *Sibbaldiopsis*. In his characterization of the group, Dr. Wolf states that the achenes of *P. biflora* only have a bunch of hairs at the scar of insertion. So far as I know they are not hairy at all and the bunch of hairs referred to are the hairs of the receptacle found in all the *Potentillae*. These are unusually long in *P. biflora*. The style in this species is also almost terminal, just as in many typical species of the genus. It is evident that Dr. Wolf has placed this as well as *P. palustris* in a wrong division of the genus.

SAXOSAE

This group consists of three species from Southern California and Lower California. They have much the habit of certain species of *Ivesia*, and for some time I regarded the first known species of the group, *Potentilla saxosa*, as a member of *Ivesia*. Dr. Wolf places *P. saxosa* and *P. rosulata* in the MULTIJUGAE group, but I think that they differ enough from that group to constitute a group by themselves. *P. acuminata* Hall is so closely related to these that I was strongly inclined to reduce it to a synonym of *P. rosulata*. The only essential differences are the thinner leaves and narrower bractlets. Dr. Wolf places it in the RANUNCULOIDES group (a group with digitate leaves), perhaps because the plant is glandular, as is *P. brevifolia*, another pinnate-leaved species referred to the same group by him. On account of the glandular pubescence, Hall thought at first the plant related to the GLANDULOSA group, i. e., the genus *Drymocallis*, and also compares it with *P. brevifolia*. The latter could easily be taken for a species of *Drymocallis*, if the style is disregarded; but *P. acuminata* does not resemble a species of that genus so much. Dr. Wolf remarks: "What separates *P. acuminata* not only from all other species of this group [RANUNCULOIDES of Wolf] but also from all other known *Potentillas* of the Earth—with the exception of

P. palustris [*Comarum* L.]—are its narrowly ovate, long-acuminate petals." This character would at once have suggested its relationship with *P. saxosa*, for the latter was originally described as having acute petals. Dr. Wolf, however, seems not to have seen the original description, for he only translates my short description into Latin. In my monograph I gave only abbreviated descriptions of the species not found within the United States and Canada.

BREVIFOLIAE

No change in this group has been made since my monograph was published. It consists of only two species, which Dr. Wolf includes in his *RANUNCULOIDES*. Dr. Wolf claims that a piece of the type of Nuttall's *P. brevifolia* is in Lehmann's herbarium and that this has ternate leaves. Occasionally the basal leaves may have but three leaflets, but this is not the usual case. I have seen Nuttall's type, and a duplicate is in the Torrey herbarium; in both the basal leaves are pinnate with five leaflets.

RUBRICAULES

In the North American Flora I recognized nine species. Of these *Potentilla proxima* was described as new. It is related to *P. Macounii*, but distinguished by the toothed, not deeply cleft leaflets. It is also of a much more southern distribution, found only in south central Utah and Arizona, while *P. Macounii* is found only in Alberta and Montana. The following specimens belong to *P. proxima*:

UTAH: Divide between Sevier and Beaver rivers, near Belknap Peak, July 28, 1905, *Rydberg & Carlton* 7369; also Aquarius Plateau, Aug. 6, 1905, 7479; mountains north of Bullion Creek, near Marysvale, July 23, 1905, 7157 and 7153.

ARIZONA: Southern slope, San Francisco Mountains, August, 1904, *Cannon & Lloyd*.

My description of *Potentilla rubricaulis* Lehm. in my monograph was based principally on material collected in the Rocky Mountain region. The species was therefore described as having 5-7 leaflets, while the original has only 3-5 leaflets. I saw my mistake and made a correction in the *BULLETIN* of the Torrey Club,* proposing the name *Potentilla rubripes* for the Rocky

*Bull. Torrey Club 33: 143. 1906.

Mountain plant. Dr. Wolf has called attention to an important difference overlooked by me, viz., that the style in *P. rubricaulis* Lehm. is much thickened and glandular at the base. He therefore includes it in the MULTIFIDAE group. Dr. Wolf also reduces *P. minutifolia* and *P. saximontana* to varieties of *P. rubripes*. As far as *P. saximontana* is concerned it can not be kept distinct from *P. rubripes*. I have come to that conclusion by the aid of material sent me by Mrs. M. E. Soth and others from the Pikes Peak region. Concerning *P. minutifolia* I am still in doubt. If, however, the species are united, the name of the species should not be *P. rubripes*, which name Dr. Wolf adopts, because that is the latest of the three, being 10 years more recent than the other two, which were published on the same page, *P. minutifolia* preceding *P. saximontana* in space.

CANDICANTES

This group contains only one Mexican species, which Dr. Wolf includes in the MULTIJUGAE group.

LEUCOPHYLLAE

In the North American Flora this contains 12 species, of which *Potentilla lupina*, *P. argyrea*, *P. viridior*, and *P. Bruceae* are proposed as new. The first two were based on material formerly included in *P. Hippiana*. *P. lupulina* resembles much *P. Hippiana*, but the pubescence is coarser, less shining, and more gray, the bractlets are small and the sepals are acuminate as in *P. effusa*. It is known from only the type locality and vicinity, and all the material seen was collected by Mr. Frank Tweedy. It is represented by his numbers 3214 and 3215, of which the latter was assigned as the type.

P. argyrea also is related to *P. Hippiana*, but differs in the dense inflorescence, dull tomentum, and smaller flowers. The dense inflorescence suggests somewhat certain species of the MULTIFIDAE group. One of the specimens was originally labeled *P. pennsylvanica*. Besides the type, the following specimens belong here:

NORTH DAKOTA: Willow City, July 18, 1891, *Lee* 219.

MANITOBA: Britte, June 27, 1906, *Macoun & Herriot* 69836. (This specimen is, however, somewhat doubtful.)

Potentilla Bruceae is related to *P. Breweri*, but differs in the fewer, broader, closely approximate pairs of leaflets. It is known from the type locality only.

Dr. Wolf includes the group in the GRACILES group, which he divides into two divisions. The first, GRACILES PINNATAE, comprises my GRACILES, RUBRICAULES (except *P. rubricaulis* Lehm.), and SUBJUGAE. He makes *Potentilla propinqua* Rydb. (*P. diffusa* A. Gray, not Willd.) a variety of *P. Hippiana*, and both *P. coloradensis* and *P. rupicola* varieties of *P. effusa*. If the author can be accused of splitting up the species too finely, Dr. Wolf especially in this case can be accused of lumping together rather clearly distinct species. *P. propinqua*, as known from field study, shows itself very distinct from *P. Hippiana*, but much less so from the typical *P. pulcherrima*. Sereno Watson saw this close relationship and united the two under the name *P. Hippiana* var. *pulcherrima*. The main differences are that *P. propinqua* is usually lower, decumbent at the base, and its leaves have 9 leaflets, directed somewhat forward; while *P. pulcherrima* is usually taller, more erect, and its leaves have generally only 5-7 leaflets, of which the lower are spreading or even reflexed. Concerning the relationship of *P. pulcherrima* to *P. gracilis* and *P. filipes*, see my remarks in the BULLETIN OF THE TORREY BOTANICAL CLUB 37: 491. 28 O 1910.

Dr. Wolf proposes a new species, *Potentilla Osterhoutiana*.* I have not seen the type nor any duplicate thereof. From the description, it seems to me to be a luxuriant form of *P. rubripes* or else the same as my *P. viridior*. I have written to Mr. Osterhout for material, but he has answered me that he has no specimens of the number cited by Dr. Wolf. He does not know what it is. From the date and locality given he thinks that it may be *P. rubripes*.†

MULTIJUGAE

This group contains, in the North American Flora, sixteen species, of which *Potentilla klamathensis*, *P. versicolor*, and *P. Nel-*

* Bibl. Bot. 16: 200. 1908.

† After this article was written, Mr. G. E. Osterhout has sent me a specimen, Osterhout 1502, which he thinks might be *P. Osterhoutiana*. It is an unusually large specimen of *P. rubripes*. The only thing that speaks against this being a duplicate of the type of *P. Osterhoutiana* is that it was collected July 12 instead of July 20.

soniana were proposed as new, and *P. crinita* and *P. Lemmoni* were transferred from the LEUCOPHYLLAE group.

Potentilla klamathensis is related to *P. millefolia* and *P. Hickmani*, but differs in the long, ascending, at last spreading pubescence. Dr. Wolf cites a specimen under *P. millefolia*, from Goose Lake. This is perhaps Cusick's specimen cited below, as *P. millefolia* is unknown outside of California. The following specimens belong to *P. klamathensis*:

OREGON: Fort Klamath, Aug. 7, 1894, *Leiberg 660*; Swan Lake, Klamath Co., 1896, *Applegate 167*; Goose Lake Valley, Aug. 19, 1901, *Cusick 2768*.

Potentilla versicolor resembles *P. plattensis* in leaf form, but the younger leaves are tomentose as well as strigose, and the pedicels are erect or ascending, not arcuate-spreading in fruit. The species is therefore more closely related to *P. ovina* and *P. wyomingensis*, but is distinguished by the tomentum. It is known from the type locality only.

Potentilla Nelsoniana is based on *P. pinnatisecta* A. Nels.,* as to the description and specimens distributed by Professor Nelson. He adopted the name from *P. diversifolia* var. *pinnatisecta* S. Wats.† An examination of Watson's type shows that it is the same as *P. ovina* J. M. Macoun.‡ Dr. Wolf makes it a variety of *P. plattensis*, stating: "I have tried for long time but in vain, to find on specimens received from the author of the species (Mr. Aven Nelson) himself characters specifically distinctive from *P. plattensis*. . . . In the organs of the flowers as well as in all other important points, one can find between *P. plattensis* and *P. pinnatisecta* even with the microscope no distinctions which warrant a specific distinction." Both Professor Nelson and myself have studied the plants in the field. The main distinctions are as follows: *P. plattensis* has a deep taproot with a short perennial crown branching just at the surface of the ground and sending out numerous, decumbent, or rarely ascending, leafy stems, with numerous flowers on pedicels which at least in fruit are arcuate-spreading. In both *P. Nelsoniana* and *P. ovina* there is a distinct

*Wyo. Exp. Sta. Bull. 28: 104. 1896.

†Bot. King's Exp. 87. 1871.

‡Can. Rec. Sci. 6: 464. 1896.

cespitose, scaly, thick subterranean rootstock, the branches of which bear at the summit numerous basal leaves and short erect or ascending stems bearing only reduced leaves. The pedicels are in fruit erect or strongly ascending. These are characters that need no microscope to be seen. The distinction between *P. Nelsoniana* (*P. pinnatisecta* A. Nelson) and *P. ovina* (*P. diversifolia pinnatisecta* S. Wats.) are that the leaflets of the former are cuneate in outline, glabrate in age, and cleft only above the middle; while in *P. ovina* they are obovate in outline, permanently hairy, distinctly pectinately pinnatifid. The latter is a much smaller plant than the former.

Dr. Wolf also makes *P. wyomingensis* a mere form of *P. platensis pinnatisecta*, and this is done evidently without having seen any specimens, for he states: "From the long diagnosis of the author can it absolutely not be seen how this 'species' can be specifically distinguished from his *P. pinnatisecta*." The fact is that the type of *P. wyomingensis* is a better developed specimen of *P. monidensis* A. Nelson, which Dr. Wolf regards as a distinct species. *P. monidensis* was described from specimens just coming into bloom. Aven Nelson, in the New Manual of the Central Rocky Mountains, keeps them distinct. The differences given, especially the form of the petals, do not hold.

Concerning *P. decurrens*, a species belonging to this group and most closely related to *P. ovina*, see my Notes on Rosaceae—IV.* As the type of *P. dissecta decurrens* was rather poor I herewith cite better material:

UTAH: Divide between Sevier and Beaver rivers, near Belknap Peak, July 28, 1905, *Rydberg & Carlton* 7355; mountains north of Bullion Creek, near Marysvale, July 23, 1905, *Rydberg & Carlton* 7152; Bromide Pass, 1894, *Jones* 5695k.

Dr. Wolf has also reduced *P. cascadiensis* to a variety of *P. Drummondii*, which is simply a matter of opinion. He also places *P. crinita* and *P. Lemmoni* in the GRACILES PINNATAE next after *P. ambigens*, notwithstanding the fact that neither of them has any tomentum.

Potentilla Richardii is transferred to the RIVALES group on account of its style. Dr. Wolf may be correct. I have not seen

*Bull. Torrey Club 37: 495. 28 O 1910.

the type nor any authentic material. The habit, judging from Lehmann's plate, suggests, however, this group and is most like that of *P. arizonica*.

MULTIFIDAE

This group, as treated in the North American Flora, contains 16 species, of which *P. paucijuga* and *P. lasiodonta* are new. The former is probably most nearly related to *P. pseudosericea*, but the stem and petioles are silky-villous with spreading hairs, as in *P. pulchella*, and the inflorescence is open. I have seen no specimen except the type, which in habit resembles somewhat *P. rubripes*, but the styles are quite different and place the plant in this group. The type specimen is mounted on the same sheet with four specimens of *P. propinqua*.

Potentilla lasiodonta was based on material distributed as *P. pennsylvanica* and *P. strigosa*. It has the broad leaflets of the former and the pubescence of the latter, but differs from both in the dense inflorescence, similar to that of certain species of *Drymocallis*, and in the numerous lanceolate divisions of the leaflets. These number 15-21, while in *P. pennsylvanica* and *P. strigosa* there are 9-13. The following specimens belong here:

ALBERTA: Calgary, July 21, 1897, *Macoun* 16716.

SASKATCHEWAN: Tramping Lake, Aug. 4, 1906, *Macoun* & *Herriot* 69810.

MANITOBA: Rapid City, 1896, *Macoun* 12576.

The MULTIFIDAE are one of the most difficult groups of the North American species of *Potentilla*. The difficulty is to draw lines between species. A conservative botanist might admit but four or five species, viz., *P. pulchella*, *P. bipinnatifida*, *P. multifida*, and *P. pennsylvanica*, and maybe *P. virgulata*. Nelson, in the New Manual of the Central Rocky Mountains, admits *P. bipinnatifida* Dougl. (which he, however, has renamed *P. pinnatifida* Dougl.), *P. pennsylvanica* with two varieties, *P. atrovirens*, and *P. virgulata*. *P. pseudosericea*, he makes a synonym of "*P. pinnatifida*." *P. pulchella*, *P. multifida*, and their allies are not found in the Rocky Mountain region. Dr. Wolf admits *P. pulchella*, *P. pseudosericea*, *P. bipinnatifida*, *P. multifida*, *P. litoralis*, *P. pennsylvanica*, and *P. glabella*. Note the differences of opinion. Nelson regards *P. atrovirens* and *P. virgulata* as good

species, while Wolf regards both as varieties of *P. pennsylvanica*. Wolf regards *P. pseudosericea* and *P. glabrella* as good species, while Nelson regards the former as a synonym of *P. bipinnatifida* and ignores *P. glabrella* altogether. When such a diversity of opinion exists regarding the limitation of the species, and I in my mind was just as uncertain which should be regarded as species and which as varieties or forms, I treated all that had some characters tolerably constant as distinct species.

Both Wolf and Simmons* regard *P. Sommerfeltii* as a variety of *P. pulchella*. Dr. Simmons states: "but there are in the London collections, no original specimens from Ross's first voyage and the specimens under the name of *P. pulchella* from Melville Island, that I have seen, are really *P. Vahlia*, to which, however, the description does not apply." In the old Torrey herbarium there are some specimens of the Melville collections, gathered by Parry. Two of these are *P. Vahlia* but one is *P. pulchella* as I understand it, a plant with leaves densely silky on both sides, slightly if at all tomentose beneath, and with narrow, linear, acute segments. *P. Sommerfeltii*, as I understand it, has leaves green and almost glabrous above, somewhat silky and densely white-tomentose beneath, with oblong, rather than linear, and obtuse segments. This is the common plant of Spitzbergen, but also found in arctic America.

The original *Potentilla Sommerfeltii* was collected by Keilhave and found in Sommerfelt's herbarium; it may be the same as *P. Keilhavii* Sommerf.,* which has always been regarded as a synonym of *P. pulchella*. As it has been impossible for me to see the original description of *P. Keilhavii*, I left it as a questionable synonym under that species.

If *P. Sommerfeltii* is regarded as a species, it would not be out of place to regard *P. pulchella elatior* as such. It has been customary to label all tall well-developed plants *P. pulchella* v. *elatior* and all depauperate ones *P. pulchella*. Without regard to size, there are evidently two distinct races (they may be called species, varieties, or forms) known as *P. pulchella*, beside *P. Sommerfeltii* discussed above. One is the typical *P. pulchella* just

* Vasc. Pl. Fl. Ellesmereland 479. 1906.

† Mag. Naturv. II. 1: 244. 1832.

briefly described. The other is usually, but not always, a larger plant, with the terminal leaflet decidedly petioled, the leaves dark green above, white-tomentose beneath, with oblong or lanceolate divisions and larger petals usually decidedly emarginate. I take it as the same as Lange's *P. pulchella elatior*, but as the name *elatior* is not available as a specific name I proposed the name *Potentilla subarctica*.

Dr. Wolf does not admit *P. multifida* to North America, although I included it in my monograph. We have, however, specimens from this continent, which I can not separate from Old World material. Among others may be mentioned the following specimens:

CANADA: Raft River, west coast of Hudson Bay, August 9, 1904, *Spreadborough* 62383; Pipestone Creek, Rocky Mountain Park, July 7, 1904, *Macoun* 65150.

Robinson and Fernald, in Gray's New Manual, reduced *Potentilla litoralis* Rydb. to a synonym of *P. pennsylvanica* L. Their idea of the latter was evidently based on that of Watson, for their description is copied verbatim from that in the sixth edition of Gray's Manual, except that the height of the plant is given in decimeters instead of feet. It is natural to suppose that a plant named *P. pennsylvanica* should have come from the east, and in the fifth edition of Gray's Manual the given range includes even "Pennsylvania?" It is entirely wrong, however, to apply the name *P. pennsylvanica* to our coast plant, which I described under the name *P. litoralis*.

Linnaeus did not describe his *Potentilla pennsylvanica* from a plant collected in Pennsylvania but from plants cultivated in the gardens of Europe under that name. Jacquin, in his *Hortus Vindobonensis*, illustrated it under that name, and if I am not mistaken Linnaeus had received his specimens from Vienna. Dr. Wolf, who admits *P. litoralis* as a good species states: "This [*P. pennsylvanica* var. *communis* T. & G.; *P. missourica* Schrader] is the true *P. pennsylvanica* of Linnaeus, the one figured by Jacquin, the one cultivated in the botanical gardens since Linnaeus' time and for long time escaped in the vicinity of Paris." Dr. Wolf therefore fully supports my interpretation of *P. pennsylvanica*. What it is, anybody may ascertain for himself by looking up the

illustrations of *P. pennsylvanica* in Jacq. Hort. Vind. 2: *pl.* 189, or *P. missourica* in Bot. Reg. 17: *pl.* 1412. 1831. The description in Gray's New Manual is not that of *P. pennsylvanica*, but of *P. litoralis* Rydb. Unfortunately for me the latter name has to give place to *P. pectinata* Raf., which is without doubt the same as our coast plant.

Dr. Wolf regards *Potentilla strigosa*, *P. arachnoidea*, *P. atrovirens*, and *P. virgulata* as varieties of *P. pennsylvanica*, but regards *P. glabrella* as a species. It has no better right to such a place than the rest. I have treated them all as species, although I regard *P. arachnoidea* especially as very close to *P. strigosa*. In proposing the species *P. glabrella*, I cited as a synonym *P. sericea* var. *glabrata* Lehm.,* following Dr. Watson. Dr. Wolf points out that the specimen on which this variety was based belongs to a form of *P. plattensis*. From the characterization I believe that Dr. Wolf is correct, and that the synonym should be eliminated.

NEW YORK BOTANICAL GARDEN.

*Hook. Fl. Bor.-Am. 1: 189. 1832.